

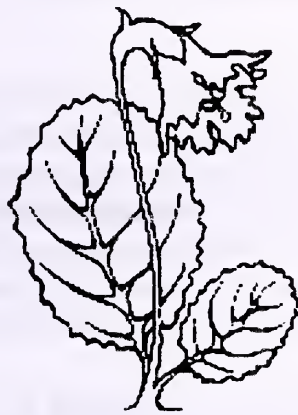
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Spring

# SHORTIA

## NEWSLETTER OF THE

### WESTERN CAROLINA BOTANICAL CLUB

### SPRING 2010



*Shortia galacifolia*

Oconee Bells

## WESTERN CAROLINA BOTANICAL CLUB

*President*                      *Juanita Lambert*  
*Vice President*           *Frances Jones*

*Secretary*                   *Nancy Iha*  
*Treasurer*                 *Alan Graham*

From the Vice President .....Frances Jones

“Bringing Nature Home by Douglas Tallamy is a game changer,” said an acquaintance recently. By this he meant that reading this book will significantly transform your view of what to plant or to preserve in your garden.

I ordered the book on Amazon, read it, and “got religion”. I was so enthusiastic, I ordered six more copies and gave them as Christmas presents.

I have honored friends in the Western Carolina Botanical club who have nudged me to prefer planting natives in my garden. Some gardening lecturers also urge planting natives. The reasons given are because natives are hardy, provide food and shelter for wildlife, and promote the wise stewardship of land. I have found these reasons persuasive enough and all are mentioned by Tallamy. But his fascinating explanations of these concepts beats anything I’ve heard before. Only after reading “Bringing Nature Home” did I understand why using natives is crucial.

It is obvious but I didn’t see it. Insects can only eat vegetation from plants with which they share an evolutionary history. Most insects are specialists because they have evolved in concert with only a few plant linkages. Insects are unable to eat the alien plants with which we are filling our landscapes. Without the insects we will lose our moths and butterflies and our birds whose survival depends on insects as well as fruits and seeds. As an example, the fly maggot lives inside round galls often seen on the stems of goldenrod and is high in protein and fats. A chickadee eating a fly maggot can get through the coldest winter.

Tallamy writes, “Birds....will not be in our future if we provide them only with shelter and nesting sites. Their most important requirement is food, and, most alien species do not produce the insects birds need to feed their young - to make more birds....there are dozens of native species that provide all of what birds need - cover, nest sites, and food.”

How long does it take for an alien plant to become palatable to native insects? “It may be 10 thousand or many hundreds of thousands of years before these plants play the same roles in the food web in North America that they played whence they came.”

Our wild lands are being converted into malls and residential developments. In many parts of the U.S. the only habitats left for wildlife are the gardens we tend. We are losing native species at an alarming rate and these gardens planted with natives will slow the extinction rate.

Tallamy writes “We humans have disrupted natural habitats in so many ways and in so many places that the future of our nation’s biodiversity is dim unless we start to share the places in which we live with the plants and animals that evolved there. Because life is fueled by the energy captured from the sun by plants, it will be plants that we use in our gardens that determine what nature will be like 10, 20 and 50 years from now.”

## Member News

### New Members

Judith Gosser

Joan Lemire

Robbie ter Kuile. Robbie learned of the Botany Club from Annie Ewing. She lived in Carrollton, a suburb of Dallas for eight years before coming to Tryon. Her hobbies are fabric arts, gardening and reading. She is a retired reading teacher.

Joe Standeart

Susan Sunflower

Teena Tuenge

### Returning Member

Christene Schmidt

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ANNUAL DUES. This is the final request for your Botanical Club membership renewal. Please fill in all the information on the green form and return it with your check so we can verify our membership records

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Field Trip Cancellations. On occasion field trips need to be cancelled or changed either for weather conditions or other reasons such as road closings. Such changes are sent out by e-mail to all members at the latest by 7 a.m. the day of the field trip. If you do not have e-mail access, we will try to reach local members by telephone by 7 a.m. If in doubt, contact a leader or co-leader whose telephone number is listed on the schedule. When a field trip is cancelled, no member will be at the contact point.

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Needed: A member who will take over the mailing of Shortia each quarter. This will entail keeping the Shortia member list up-to-date, printing the labels and assisting in preparing the copies for mailing. Not "labor intensive". Call Anne Ulinski, Editor, 828-697-9527, if you can help.

We concluded another successful walk season in 2009. We had scheduled 38 outdoor activities and had six cancelled due to rain or possible rain.

The final walk was **DuPont Forest** where we walked the **Galax Trail**. With all of the rain during the previous months, **Triple Falls** and **High Falls** were spectacular. Late in the season the plants were either in leaf or in seed so no noteworthy blooming plants, only a lonely Great Blue Heron sunning his/herself by the water.

Cancellations became a topic of discussion throughout the season as we couldn't seem to get into sync with the weather. It should have been evident the way the year started.

The Hardy Souls Hike was held in a drizzle and seven crazies walked the **Nature Trail** at the **Pisgah Ranger Station** in ponchos and umbrellas. It was pretty much downhill from there.

We walked the **Shut-in Trail** at Big Ridge Overlook with umbrellas. We walked the **Green River Preserve** in a deluge that turned everything into a bog! We waded the trail as **Lewis Creek** bog took over the walkway even though it was sunny. We walked "fast" on the **Shut-in Trail** in an effort to beat the rain that was coming -we did just beat it. As we reached the **Wolf Mountain Overlook** during the Parkway South trip the clouds moved in and threatened rain once again. All of this occurred for trips that 'weren't cancelled.'

We did cancel one walk and the sun shone brightly all day. Most of the outings were at familiar locations. However, we did try a few new spots. We substituted **Pine Tree Loop** in the Bent Creek area for **Pilot Mountain**. It was one of those we did cancel but several hardy souls walked in the rain anyway. The **Givens Estate** has a trail that we enjoyed for the first time at the invitation of John and Muriel Siddall.

Erna Prickett introduced us to the **Furman Campus** and the walk of trees. **Lewis Creek** is an environmental easement with the Carolina Mountain Land Conservancy. Beth Bockoven led the walk at the bog in the **Green River Preserve**. Paula Robbins introduced us to the section of **Shut-in Trail** that starts at the Big Ridge Overlook. Halloween was celebrated at the **McCall Cemetery**.

With the current shift from rain to snow, who knows what the new season will bring us. We look forward to another season of outings at locations both old and new. Be sure to join us because you know that above all, we will be having a good time!



## Violets

The old fashioned Valentine begins with these lines: Roses are red, violets are blue. Those who walk woodland trails looking for signs of Spring know that violet flowers are blue/purple, yellow, white and green. One of the earliest to bloom is the round leaf yellow violet, *Viola rotundifolia*. When the flowers appear the leaf is the size of a nickel or smaller. As the season progresses the fuzzy round leaves hug the ground and grow much larger.

Identification keys divide violets into two groups based on their bloom stalks. Those that have leaves and blossoms on separate stalks are acaulescent or stemless. The stemmed or caulescent violets have both leaves and flowers on the same stalk.

### Acaulescent violets

*Viola rotundifolia* is the only yellow flowered one in this group.

White flowers are:

*Viola blanda*, Sweet White Violet, is usually found growing in moist areas. The flowers and leaves have reddish stems.

*Viola primulifolia*, Primrose Leaf Violet, prefers moist soil. The leaf shape is lance ovate.

Blue-flowered violets include:

*Viola sororia*, the Common Blue or Dooryard Violet, grows in lawns and other open areas. The white form is Confederate Violet.

*Viola pedata*, Bird's Foot Violet, gets its common name from the finely divided leaves that resemble a bird's foot. It grows in sandy soils in sunny locations. The large flowers have exerted orange stamens.

*Viola palmata*, Wood Violet, grows in dry woodlands. The first leaves to emerge may be heart shaped but later are lobed.

*Viola cucullata*, Marsh or Bog Violet, grows along stream banks. Its light blue flowers with a dark eye stand above the leaves.

### Caulescent violets

The yellow flowered ones are:

*Viola hastata*, Halberd Leaf Violet. The common name refers to the triangular leaf that is shaped like a medieval ax like weapon. The leaves often have silvery markings.

*Viola pubescens*, Yellow Woodland Violet, may be smooth or downy. The flowers have brownish, purple veins near the base. At one time this was classified as two genera: *Viola eriocarpus*, Smooth Yellow Violet and *Viola pubescens*, Downy Yellow Violet.

The white flowered, *Viola canadensis*, Canada Violet, grows in rich cove forests. The flower has a yellow eye and may have a lavender tint on the back side.

*Viola rostrata*, Long Spur Violet, has lavender flowers. It gets its common name from the long, often 1/2 inch spur, on the flowers.

*Hybanthus concolor*, Green Violet, does not fit our idea of a violet. It is a tall plant with alternate elliptic leaves. Small green flowers are located in the leaf axils. It is usually found on alkaline soils.

Let's make it our challenge to find and identify these violets on our spring trips.

-Bonnie Arbuckle

## **Bent Creek Institute**

On November 20, 2009, 12 members of the Western NC Botanical Club toured the lab of the Bent Creek Institute, in the Greenhouse building at The North Carolina Arboretum.

The Bent Creek Institute (BCI) is a non-profit organization established about two years ago for preservation of and research into medicinal plants, especially those native to the WNC mountains. BCI is located in The North Carolina Arboretum (TNCA), at the southern edge of Asheville, adjacent to the Blue Ridge Parkway and Pisgah National Forest. Western North Carolina is an ideal location, due to its genetic diversity and long history of medicinal plant use and trade. In addition to TNCA acreage and national forest land, BCI has received permission to collect plants from other land tracts, such as Balsam Mountain Preserve and undeveloped areas of the Biltmore Estate.

The BCI has had funding through the state university system, other state resources, and various grants. Recent budget constraints have cut back in state funding, but grants from other sources have continued to be sought and received. BCI has been developing partnerships with regional and national groups, planning collaboration in such areas as research into medical efficacy, product development, agricultural and economic applications, and conservation of rare plants.

Dr. Joe-Ann McCoy is the botanist who directs the Bent Creek Germplasm Repository, which she started in 2008. This is the first primarily medicinal plant gene bank in North America. Until now, germplasm collections in North America have concentrated on agricultural species. Other parts of the world have medicinal plants in their gene banks, but they primarily comprise plants from Asia, Europe, and the tropics.

By preserving germplasm of native medicinal plants, species can be safeguarded in case of natural disasters or depletion by habitat loss due to "development". Germplasm may include seeds, DNA, pollen, and entire plants. Tissue samples for chemical analysis, and herbarium vouchers are also collected, prepared, and stored. In addition to protection in the local repository, arrangements have been made for back-up storage in the international plant gene bank in Norway. The germplasm must be properly gathered, stored, photographed, vouchered, inventoried, described, labeled, and managed.

Besides the preservation of genes, the germplasm repository supports biotechnology research by providing plants of known genetic origin that can be used in reproducible studies of research findings. Plant samples of known origin can also be useful in screening for contaminants in commercial phytopharmaceutical preparations. Plant samples can be distributed to other scientists for collaboration in research regarding medical efficacy; chemical, genetic and molecular analysis; and development of pharmaceuticals. In addition, BCI hopes to encourage development



of regional small-farm production of native medicinal plants, and marketing of such products to manufacturers of natural medicines in the USA and in other countries. (e.g. Chinese herbal medicine especially values plants such as ginseng from WNC, due to the potency of plants grown here.)

Dr. McCoy is also beginning a medicinal endophyte germplasm bank. Endophytes (fungi or micro-organisms growing on or inside plants) have been found to have medicinal properties of their own; in fact, some medicinal properties attributed to certain plants may also be found in their associated endophytes. e.g. Anti-cancer drug Taxol which was first discovered in the bark of the Pacific yew has since been discovered in its associated endophyte..

Dr. McCoy is assisted by technician Jeff Levi, who is a master's level botanist, and by a dozen volunteers. The volunteers have ranged in age from teens to over-90, and have backgrounds in such fields as biology, medicine, art, photography, computer science, office management, and engineering.

Volunteers are scheduled on Tuesdays, Wednesdays, and Thursdays. They work anywhere from a few hours a month to 2 full days a week. They work primarily in the lab in the Greenhouse building, but some participate in field trips to assist in gathering plant specimens, and some have worked in the biochemistry lab. Tasks in the germplasm lab include computer database entry, germinating and planting seeds, pressing and drying plant material, cleaning seeds, counting seeds, mounting herbarium vouchers of dried specimens, photographing vouchers and other specimens, and generating and maintaining computer databases. One volunteer plotted the locations of various colonies of medicinal plants on a map of TNCA, and another volunteer is designing a self-guided tour of medicinal plants in TNCA.

Persons interested in volunteering at BCI or in other area of the Arboretum may contact Lynne Garrison, Volunteer Coordinator at TNCA, ( 828)665-2492.

-Howard and Linda Jackson, Volunteers at Bent Creek Institute

Some of this information is from BCI website, bentcreekinstitute.org; some information is from the short documentary film "Plants to People," directed by Kurt Mann, 2009; and from news article "From WNC to China" by Dale Neal in the Asheville Citizen-Times, January 17, 2010. Dr. Joe-Ann McCoy made revisions.

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*Howard and Linda are both members of the Botany Club. They arranged the November visit which turned out to be so informative and interesting we asked them to follow up with this article. Many thanks to both of them.-Ed.*

## FLOWERING PLANT FAMILIES – *Iridaceae* – Iris Family

Learning genera is made easier by knowing the families to which they belong. This requires learning the basic characteristics of each family. Although there are many families in our Flora, if you learn families one at a time, the task is not as difficult as you imagine. Let's start with a relatively common, small family with easily observed characteristics.

First one must determine if the plant is a monocot or a dicot ("mono" for one, "di" for two, and "cot" for cotyledon or embryonic leaves that emerge at sprouting time). Because we don't generally seek to identify a plant when it first surfaces, following are two other easily observed clues to identify monocots:

**Leaves are generally narrow and parallel-veined (dicot leaves are often broader and veins are never truly parallel).**

**Flower parts often come in threes or multiples of three (dicot parts may appear in fours, fives, or more).**

Examples of monocots are: grasses, lilies, orchids, palms, trilliums, asparagus, and irises.

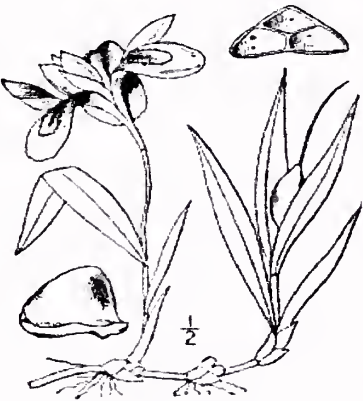
Primary characteristics that separate the *Iridaceae* from other monocots follow:

**Inferior ovary lies below the perianth (collective term for the calyx and the corolla).**

**Stamens are typically 3, as are the sepals and petals (6 tepals).**

**Sword-shaped leaves are oriented edgewise to the stem; both surfaces are identical.**

Native genera represented in the Appalachian Mountains are: *Sisyrinchium* (Blue-eyed Grass) and *Iris* (examples: *Iris cristata* and *Iris verna*).

	<p><i>Iris cristata</i> Dwarf Crested Iris</p> <p>Britton, N.L., and A. Brown. 1913. <i>An illustrated flora of the northern United States, Canada and the British Possessions</i>. Vol. 1: 540.</p>	<p>This white-crowned, lavender iris prefers light shade and mildly acidic to neutral, moist, rich, soils. Its leaves are wider than those of its relative <i>Iris verna</i> found in more acidic soils. Note the 3-parted capsule that contains the seeds.</p> <p>The roots are toxic if ingested.</p>
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Many non-native members of the Iris family are grown in our area (*Crocus*, *Freesia*, *Gladiolus*, *Narcissus*).

According to Greek mythology, the Goddess Iris personified the rainbow and was the fast messenger of the gods. She was said to unite Heaven and Earth. The word "iridescence" is said to have been derived from the name of this goddess. Greeks planted purple irises on the graves of women. The word for rainbow in Spanish and Portuguese is "arco-iris".

See how many monocots you can find during our coming field trips.



## CONNECTIONS

Shallow depressions in the sandy mud alongside a woodland stream.

Depressions made by a wandering raccoon, an animal so well adapted to feed on the clams buried beneath the surface of the sand that they fish by touch alone...

Connections.

The clams strain minute plankton, clarifying the water, cleaning it until it sparkles--growing inside their shells until a passing raccoon senses their presence beneath the sand--and....

Connections.

The plankton--tiny children of the sun using the basic elements of nature to create the stuff of life, to build their own living plant-selves from the sun and minerals that surround them in the water.

Connections.

Standing -- on the verge of the crystal waters watching the connections unfold, watching the interconnectedness take place.

Stepping -- carefully least I erase the trace of what has passed here...of the connections that have taken place.

Wondering -- where I and mine belong in this web of life.

Sensing -- in those shallow wadings and wanderings the elements of nature flowing through me.

Knowing -- that someday, somehow I and mine have become separated from the primal patterns shifting and blending in the waters of this stream.

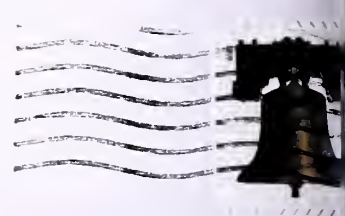
Understanding-- that the separation is only temporary--can only be temporary, is only illusion.

Standing -- again, in the shadows at the edge of the pond.

Watching -- these connections in my delight and in my fear.

-Tom Baugh  
Hidden Springs

*Tom Baugh is a biologist with specialization in ecology and 30 years experience in science information, natural resource management and conservation biology. He recently facilitated a series of lectures entitled "Concepts in Ecology" at the Bullington Center. With Tom's permission we reprint one of his poems.*



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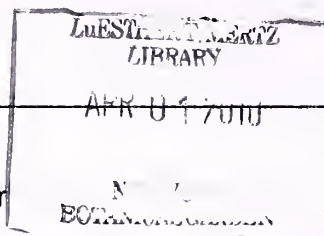
## SHORTIA

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Editor: Anne Ulinski  
Editorial Assistants: Jean Lenhart, Kim Spencer  
Member News: Ruth Anne Gibson



Please submit contributions for the next issue by May 15, 2010

The purpose of the Club is to study the plants of the Southern Appalachian Mountains and the Southeast through field trips and indoor meetings. Membership is open to all. Individual/family memberships are \$15. New members joining from the period July 1-December 31, pay \$8. All memberships are renewable on January first of each year. Send dues to: Alan Graham, 544 Tip Top Road, Brevard, N.C. 29812